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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/826,279	04/19/2004	Sung Gap Im	2658-0317P	9919
2292	7590	05/31/2006	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			MACCHIAROLO, PETER J	
			ART UNIT	PAPER NUMBER
			2879	

DATE MAILED: 05/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

H-8A

Office Action Summary

Application No.

10/826,279

Applicant(s)

IM, SUNG GAP

Examiner

Peter J. Macchiarolo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Response to Amendment

The reply filed on 03/06/2006 consists of changes to the specification and to the claims, and further, the reply consists of remarks related to the prior rejection of claims in the previous Office Action. The above have been entered and considered. However, pending claims 1-32 are not allowable as explained below.

Specification

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 9-12, 21, 25-27, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ogura et al (USPN 6924594; "Ogura") in view of previously cited Lewandowski et al (US PG PUB 20050023972: "Lewandowski").

Regarding claim 1, Ogura discloses in figure 2 an electro-luminescence (EL) device, comprising: a first electrode (202) formed on a substrate (201); a second electrode (208) formed to overlap said first electrode; an organic EL layer (205) located between said first electrode and

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said second electrode; and a dielectric layer (206) formed between said second electrode and said EL layer.

Ogura is silent to the dielectric layer containing an antioxidative material.

However, Lewandowski teaches in paragraph [0011] that an antioxidative material may be added to a dielectric layer between a light emitting layer and an electrode in an EL display. One would be motivated to this configuration to allow for a more durable EL display that has improved oxidation resistance.

Therefore, in view of the above discussion, it would have been obvious to one having ordinary skill in the art at the time the invention was made to construct Ogura's device with the dielectric layer containing an antioxidative material.

Regarding claim 9, Ogura discloses in column 8 lines 39-45m the thickness of the dielectric layer is about 2nm (20 Å).

Regarding claim 10, Ogura discloses in figure 2 a hole injection layer (HIL 203) formed on the first electrode, hole carrier layer (HCL 204) formed on the HIL, a light-emitting layer (LEL 205) formed on the HCL.

Although Ogura is silent to an electron carrier layer (ECL) formed on the LEL, and an electron injection layer (EIL) formed on the ECL, the Examiner takes official notice that this is a well-known configuration and modification.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to construct Ogura's device with an ECL formed on the LEL, and an EIL formed on the ECL to increase light emitting efficiency.

Regarding claim 11, Ogura discloses in column 6 lines 39-41 that the front electrode comprises ITO.

Regarding claim 12, Ogura discloses in figures 2 and 9 a flat panel display, comprising a transparent substrate (fig. 2, #201), and organic EL array formed on the transparent substrate, wherein the organic EL array includes a first electrode (202) formed on the transparent substrate (201); a second electrode (208) formed to overlap said first electrode; an organic EL layer (205) located between said first electrode and said second electrode; and a dielectric layer (206) formed between said second electrode and said EL layer.

Ogura is silent to the dielectric layer containing an antioxidative material.

However, as discussed above, Lewandowski teaches in paragraph [0011] that an antioxidative material may be added to a dielectric layer between a light emitting layer and an electrode in an EL display. One would be motivated to this configuration to allow for a more durable EL display that has improved oxidation resistance.

Therefore, in view of the above discussion, it would have been obvious to one having ordinary skill in the art at the time the invention was made to construct Ogura's device with the dielectric layer containing an antioxidative material.

Regarding claim 21, Ogura and Lewandowski are silent to a method for manufacturing the device.

However, one skilled in the art will recognize that manufacturing such a device will comprise the recited steps of forming. Since only generic method steps and no specific method steps are claimed, the structure taught by Ogura and Lewandowski meets Applicant's recited method step limitations.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to construct the EL device of Ogura and Lewandowski with the method of claim 21, since the method steps are obvious in light of the resultant structure.

Regarding claim 25, the limitations herein have been addressed at rejected claim 10.

Regarding claim 26, the limitations herein have been addressed at rejected claim 9.

Regarding claim 27, Ogura discloses in column 6 lines 39-41 that the front electrode comprises ITO.

Regarding claim 31, Ogura discloses in figure 2 a packaging plate (213) formed above the second electrode, and a sealant (212) formed between the transparent substrate and the packaging plate to encapsulate the organic EL array.

Claims 2 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ogura in view of Lewandowski in view of previously cited Hiraga et al (US PG PUB 20040195206: "Hiraga").

Regarding claims 2 and 6, Ogura and Lewandowski are silent to the exact antioxidative material used.

However, Hiraga teaches in [0249]-[0252] that many different materials may be used to provide an antioxidant function, such as a known organic material, phenol resin derivative, which will strengthen the overall oxidation prevention function.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to construct the device of Ogura and Lewandowski with the antioxidative material of Hiraga to strengthen the overall oxidation prevention function.

Claims 3, 7, 8, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ogura in view of Lewandowski in view of previously cited Yamazaki et al (US PG PUB 20050206313: "Yamazaki").

Regarding claims 3 and 8, Ogura and Lewandowski are silent to the exact antioxidative material used, but teaches that a variety of materials can be used and added to the dielectric layer, such as antioxidants and pigments.

However, several metallic powder antioxidant materials are known in the EL art, such as barium, as evidenced by Yamazaki at paragraph [0190]. One would include barium oxide in the device's dielectric layer of Ogura and Lewandowski to strengthen the overall oxidation

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prevention function. Furthermore, barium is known as a primary ingredient in pigments, which Lewandowski further teaches is desirable.

Therefore, in view of the above discussion, it would have been obvious to one having ordinary skill in the art at the time the invention was made to construct the dielectric layer of Ogura and Lewandowski with a barium antioxidant to not only improve the overall oxidation prevention function, but also to function as a pigment for the overall device.

Regarding claims 7 and 28, although not expressly stated in Yamazaki, it is known in the art that barium has a low work function and prevents deterioration of the organic EL layer due to moisture or oxygen. The reasons for combining and motivations are the same as for claim 3.

Claims 4, 5, 13-20, 22-24, 29, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ogura in view of Lewandowski in view of Hiraga in view of Yamazaki.

Regarding claims 4 and 14, Ogura and Lewandowski are silent to the exact antioxidative material used, but teaches that a variety of materials can be used and added to the dielectric layer, such as antioxidants and pigments.

However, as discussed above, Hiraga and Yamazaki teach an organic and metallic antioxidant ingredient. One would be motivated to combine Hiraga and Yamazaki's ingredients into Lewandowski's dielectric layer to further increase the overall oxidation prevention function with the ability to include a barium pigment.

Therefore, in view of the above discussion, it would have been obvious to one having ordinary skill in the art at the time the invention was made to construct the device of Ogura with

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the dielectric layer of Lewandowski, Hiraga, and Yamazaki to allow for a very durable device which has extreme resistance to oxidation allowing for a long lifetime of the device.

Regarding claims 5, and 13, although Ogura, Lewandowski, Hiraga, and Yamazaki is silent to the exact amount of organic material and metallic powder, it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233. Further, one would be motivated to construct the device of Ogura, Lewandowski, Hiraga, and Yamazaki with the recited composition for a variety of reasons. For example, the overall oxidation prevention function will be greatly improved while including a barium pigment to meet required color and light transmission rates.

Therefore, in view of the above discussion, it would have been obvious to one having ordinary skill in the art at the time the invention was made to construct the device of Ogura, Lewandowski, Hiraga, and Yamazaki with the recited composition to improve the overall oxidation prevention function.

Regarding claim 15, Ogura shows in figure 8b, the organic EL array includes a TFT transistor array portion (TFT).

Regarding claims 16-20 and 22-24, the limitations herein have been previously addressed at rejected claims 4, 3, 10, and 11 and will not be repeated here.

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Regarding claims 29 and 30, although not expressly stated in Yamazaki, it is known in the art that barium has a low work function and prevents deterioration of the organic EL layer due to moisture or oxygen. The reasons for combining and motivations are the same as for claim 3.

Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ogura in view of Lewandowski in view of Park et al (USPGPUB 20020155320; "Park").

Regarding claim 32, Ogura discloses in figure 2 a getter (211). But, Ogura and Lewandowski are silent to the getter being formed in a portion of the packaging plate.

However, Park shows in figure 5 a getter (56) being formed in a portion of the packaging plate (52) and a transparent film (54) arranged in the portion of the packaging plate configured to fix the getter in place.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to construct the device of Ogura and Lewandowski with a getter formed in a portion of the packaging plate and a transparent film arranged in the portion of the packaging plate configured to fix the getter in place to allow for a method of manufacturing an organic EL device without having the getter from falling down into luminous areas, thereby increasing the durability of the overall device.

The Examiner notes that the claim limitation "etched portion" is drawn to a process of manufacturing which is incidental to the claimed apparatus. It is well established that a claimed apparatus cannot be distinguished over the prior art by a process limitation. Consequently, absent a showing of an unobvious difference between the claimed product and the prior art, the

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subject product-by-process claim limitation has been considered, but not patentably distinct over Ogura and Lewandowski (see MPEP 2113).

Response to Arguments

Applicant's arguments with respect to claim have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

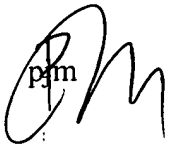
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter J Macchiarolo whose telephone number is (571) 272-2375. The examiner can normally be reached on 8:30 - 5:00, M-F.

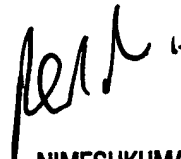
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar Patel can be reached on (571) 272-2475. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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